AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph beginning on page 1, line 2, as follows:

This application is a continuation-in-part of:

1) U.S. patent application Ser. No. 10/118,858 filed Apr. 9, 2002, now U.S. Pat. No. 6,720,920, which is:

A) a continuation-in-part of U.S. patent application Ser. No. 09/177,041 filed Oct. 22, 1998, now U.S. Pat. No. 6,370,475, which claims priority under 35 U.S.C. §119(e) of U.S. provisional patent application Ser. No. 60/062,729 filed Oct. 22, 1997;

B) a continuation-in-part of U.S. patent application Ser. No. 09/679,317 filed Oct. 4, 2000, now U.S. Pat. No. 6,405,132, which is a continuation-in-part of:

a) U.S. patent application Ser. No. 09/523,559 filed Mar. 10, 2000, now abandoned, which claims priority under 35 U.S.C. §119(e) of U.S. provisional patent application Ser. No. 60/123,882 filed Mar. 11, 1999, and which is a continuation-in-part of U.S. patent application Ser. No. 09/177,041 filed Oct. 22, 1998, now U.S. Pat. No. 6,370,475, which claims priority under 35 U.S.C. §119(e) of U.S. provisional patent application Ser. No. 60/062,729 filed Oct. 22, 1997; and

C) a continuation-in-part of U.S. patent application Ser. No. 09/909,466 filed Jul. 19, 2001, now U.S. Pat. No. 6,526,352; and

2) U.S. patent application Ser. No. 10/216,633 filed Aug. 9, 2002, now U.S. Pat. No. 6,768,944, which is a continuation-in-part of U.S. patent application Ser. No. 10/118,858 filed Apr. 9, 2002, now U.S. Pat. No. 6,720,920.

Please amend the paragraph beginning on page 69, line 4, as follows:

Neural associative memory works due to multi-stability of strong feedback systems. Common models, like Hopfield networks and bi-directional associative memory, provide ~~memorisation~~ memorization by means of computation network weights. It does not corrupt previously stored images. Unfortunately, these networks cannot be widely used because of their low capacity and inefficient physical memory usage. A number M of vectors ~~memorised~~ memorized does not exceed 14% of the number of neurons in the network N. Since a network contains N^2 connections, it needs storage of at least $25M^2$ real weight values.

Please amend the paragraph beginning on page 69, line 10, as follows:

Cellular architecture can exhaustively solve the problem of physical memory usage. Cellular memories have band-like synaptic matrix. The volume (number of elements) grows linearly with respect to neuron number. ~~This is why~~ For this reason, cellular neural networks (CNNs) can be useful for very large data processing problems. Pioneering models of associative memories via CNNs were proposed in some earlier works. But more detailed studies showed some fundamental limitations. Indeed, it has now been shown that the number of images stored is restricted by a cell size. Hence, it does not depend on the number of neurons. A more efficient way of redundancy reduction has also been found due to connection selection after training. This results in the use of only a small part of physical memory without corruption of ~~memorised~~ memorized data. The network after weight selection looks like the cellular one; so by combining cellular training algorithms and weight selection, a novel network paradigm has resulted. It is an adaptive neural paradigm with great ~~memorising~~ memorizing capacity.